PALONOSETRON (ALOXI®): A SECOND GENERATION 5HT$_3$ RECEPTOR ANTAGONIST FOR CINV

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In July 2003, the FDA granted approval for palonosetron hydrochloride (Aloxi®) injection for the treatment of chemotherapy induced nausea and vomiting (CINV). The newest agent in the class of medications called 5-HT$_3$ receptor antagonists (5-HT$_3$RA) palonosetron, differs from all other agents by its higher receptor binding affinity and longer half life. These pharmacological properties have resulted in improved antiemetic activity in clinical trials, particularly in the treatment of delayed CINV after receiving moderate emetogenic chemotherapy.

Clinical studies using palonosetron have shown to be as effective compared to other 5-HT$_3$RAs in the prevention of acute CINV and more effective in the prevention of delayed CINV. As a result of these studies, palonosetron is the only 5-HT$_3$RA approved for delayed CINV. With the importance of minimizing cost of therapy for the treatment of cancer, more clinical trials are needed to evaluate the effectiveness of palonosetron versus other 5-HT$_3$RAs using standard of care combination therapy with corticosteroids and aprepitant (Emend®).

Further studies are needed to evaluate the use of palonosetron in multiple day chemotherapy regimens. Currently, the dose of palonosetron is 0.25 mg intravenously as a single dose thirty minutes prior to the initial dose of chemotherapy. Headache and constipation were the most reported adverse events with palonosetron therapy.